

## REMARKS

This amendment responds to the April 25, 2007 Office Action in the above-identified application. Claims 1-45 are pending. With this response, claim 15 have been amended to correct a typographical error and claim 34 has been amended for clarity. No new matter has been added by way of these amendments. Entry of these amendments and remarks is respectfully requested.

In the Office Action, the Examiner:

- objected to the drawings for allegedly not showing the limitations of claim 4;
- objected to the specification for allegedly not showing the limitations of claim 4;
- rejected claim 4 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement;
- rejected claims 34 and 35 under 35 U.S.C. § 102(e) as being anticipated by United States Patent No. 6,724,373 B1 to O'Neill *et al.* (hereinafter "O'Neill");
- rejected claims 1-2, 6-13, 15, 17-18, 20, 26, 28-33, and 39-42 under 35 U.S.C. § 103(a) as being unpatentable over O'Neill in view of FP 2 595 744 to Colliot (hereinafter "Colliot");
- rejected claim 36 under 35 U.S.C. § 103(a) as being unpatentable over O'Neill in view of United States Patent No. 5,683,093 to Takahashi (hereinafter "Takahashi");
- rejected claims 16, 37, and 44 under 35 U.S.C. § 103(a) as being unpatentable over Colliot and O'Neill in view of United States Patent No. 5,194,852 to More *et al.* (hereinafter "More");
- rejected claims 3, 5, 27, and 43 under 35 U.S.C. § 103(a) as being unpatentable over Colliot and O'Neill in view of Takahashi;
- rejected claim 21 under 35 U.S.C. § 103(a) as being unpatentable over O'Neill and Colliot in view of United States Patent Number 4,317,227 to Skerlos (hereinafter "Skerlos"); and
- objected to claims 14, 22-25, 38, and 45 as being dependent upon a rejected base claim.

### THE OBJECTION TO THE DRAWINGS SHOULD BE WITHDRAWN

The Examiner has objected to the drawings because the Examiner alleges that the drawings do not disclose the limitations of claim 4. Applicants traverse the objection.

Figures 1 and 3-9 disclose an apparatus that is capable of performing the method of claim 4. Accordingly, Applicants respectfully request that the objection to the drawings be withdrawn.

**THE OBJECTION TO THE SPECIFICATION AND THE 35 U.S.C. § 112, SECOND PARAGRAPH, REJECTION SHOULD BE WITHDRAWN**

The Examiner has objected to the specification because the Examiner alleges that the specification does not provide antecedent basis for the limitations of claim 4. Furthermore, the Examiner has rejected claim 4 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicants traverse the objection to the specification and the rejection of claim 4. Claim 4 recites comparing a second sensed signal with one or more predetermined signals that were measured using the same acoustic sensor that sensed the second sensed signal. Page 12, lines 29-38, of the specification provides several exemplary methods by which such a comparison can be made including (i) directly on the temporal signals  $S(t)$  received from the sensor, (ii) on the frequency spectrum of these signals, or on other data characteristics of the signals (*e.g.*, phase). Further, page 13, lines 1-7, of the specification states that such comparisons can be made by any known means including, but not limited to intercorrelation, voice recognition, signal recognition, shape recognition, neural networks, and others. Furthermore, page 16, line 16, of the specification states that two or more sensors may be used and page 16, line 34, through page 17, line 2, of the specification states that two such acoustic sensors may be of different types and/or sense different magnitudes and/or their signals may be processed differently to identify the active zones receiving impacts. Thus, Applicants respectfully submit that claim 4 as amended is supported by at least the above-identified passages of the specification.

Applicants' further submit that claim 4 as amended is supported by claim 4 as originally filed. Applicants note that the claims as filed in the original specification are part of the disclosure. *In re Benno*, 768 F.2d 1340 (Fed. Cir. 1985). Claim 4, as originally filed, recites "[t]he method as claimed in any one of the preceding claims in which several acoustic sensors (6) are used and, during the recognition step, a signal is sensed for each acoustic sensor and the signals sensed by the various acoustic sensors are compared with the predetermined signals in a different way from one another." Applicants believe that claim 4, as amended, is supported by original claim 4, particularly in view of page 16, line 34, through page 17, line 2, of the specification which states that two such sensors may be of different

types and/or sense different magnitudes and/or their signals may be processed differently to identify the active zones receiving impacts.

For the above identified reasons, Applicants respectfully request that the objection to the specification and the 35 U.S.C. § 112, first paragraph, rejection of claim 4 be withdrawn.

### **THE 35 U.S.C. § 102(e) REJECTION SHOULD BE WITHDRAWN**

The Examiner has rejected claims 34 and 35 under 35 U.S.C. § 102(e) as being anticipated by O'Neill. Applicants traverse the rejection. Claim 34 requires (i) measurement of a sensed signal caused by an impact, (ii) comparison of the sensed signal with a library of predetermined signals, and (iii) deeming a sensed signal to be in the active zone of a predetermined signal when the predetermined signal and the sensed signal are sufficiently similar. As explained in more detail below, Applicants respectfully submit that O'Neill does not disclose any of these limitations.

*O'Neill does not measure a sensed signal caused by an impact.* The Examiner apparently equates the interaction between O'Neill's pen 60 and an electronic whiteboard to Applicants' sensed signal caused by an impact. However, O'Neill does not measure an impact between a pen and an electronic whiteboard. As a preliminary matter, there is no sensor in O'Neill that can measure waves generated by such an impact. By contrast, page 8, lines 21-25, of Applicants' specification discloses sensors for measuring a sensed signal caused by an impact such as a piezoelectric sensor, a capacitive sensor, a magnetostrictive sensor, an electromagnetic sensor, an acoustic velocimeter, or an optical sensor (*e.g.* laser interferometer, laser vibrometer, *etc.*). O'Neill discloses no such sensors. As illustrated in Figures 4 and 5A, and explained on column 5, lines 19-22, the electronic whiteboard of O'Neill includes sense coils 23. Sense coils 23 do not measure an impact. Rather, as explained on column 7, line 66, through column 8, line 9, of O'Neill, a signal generated by the magnetic coupling between (i) the alternating magnetic field generated by the coil L1 of pen 60 and one of the coils in the electronic whiteboard is measured. Column 6, lines 43-52, in conjunction with Fig. 8A of O'Neill, disclose that pen 60 includes a circuit board 69 in which an oscillation circuit generates an alternating magnetic field from coil L1.

*O'Neill does not compare a sensed signal with a library of predetermined signals.* The Examiner asserts that Figure 12, items 306-318, and column 8, line 10, to column 9, line 4, of O'Neill teach comparing a sensed signal to a library of predetermined signals. Applicants disagree. There is no library of sensed signals in O'Neill. Steps 306-318 of

Figure 12 of O'Neill merely determine the X, Y coil 23 pair that is magnetically coupled to the pen 60. Then, the X, Y coordinates of this X, Y coil 23 pair is stored as the position of the pen. As described on column 8, line 10, to column 9, line 4, of O'Neill, the X, Y coil 23 pair that is magnetically coupled to pen 60 will exhibit a voltage that is larger than the voltage measured for any of the other X, Y coil 23 pairs in the electronic whiteboard.

While it is true that a voltage is measured for each X coil 23 and each Y coil 23 in step 306 of Figure 12, these voltages are not a library of predetermined signals because they are all measured at the same time that the voltage is measured for the X, Y coil 23 pair that is ultimately deemed to be the X, Y coordinate of the pen. By contrast, in Applicants' claim 34, as amended, each predetermined signal in the library of predetermined signals is determined experimentally by generating at least one impact on each active zone.

*O'Neill does not deem a sensed signal to be in the active zone of a predetermined signal when the predetermined signal and the sensed signal are sufficiently similar.* In O'Neill, the measured signal that exhibits the highest voltage is deemed to be the x, y coordinates of the pen 60. Besides the fact that no comparisons are made between a sensed signal with a library of predetermined signals in O'Neill, all analysis of signals performed in O'Neill are simply a made to determine which signal has the highest voltage. See, for example, column 8, line 21-40, and in particular the example given at lines 36-40. Thus, O'Neill is not identifying a predetermined signal that is sufficiently similar to a sensed signal, it is determining a signal that has the largest voltage.

Claim 35 depends from claim 34 and is patentable over O'Neill for at least the reasons given above for why claim 34 is patentable over O'Neill. Claim 35 is patentable over O'Neill for the additional reason that O'Neill does not disclose intercorrelating a sensed signal with a predetermined signal. O'Neill merely seeks to find the X, Y coil 23 pair that exhibits the highest voltage in the X and Y dimensions. No intercorrelation is performed. By contrast, Applicants' claim 35 requires intercorrelation between a sensed signal with a predetermined signal. A non-limiting example of such an intercorrelation is found on page 13, lines 9-24, of Applicants' specification.

**THE 35 U.S.C. § 103(A) REJECTION BASED UPON THE COMBINATION OF  
O'NEILL AND COLLIOT SHOULD BE WITHDRAWN**

The Examiner has rejected claims 1-2, 6-13, 15, 17-18, 20, 26, 28-33, and 39-42 under 35 U.S.C. § 103(a) as being unpatentable over O'Neill in view of Colliot. Applicants traverse the rejection.

As noted in Applicants' response to the 35 U.S.C. § 102(e) rejection of claim 34 above, O'Neill also does not (i) measure a sensed signal caused by an impact, (ii) compare the sensed signal with a library of predetermined signals, or (iii) deem a sensed signal to be in the active zone of a predetermined signal when the predetermined signal and the sensed signal are sufficiently similar. Each of these limitations is required by Applicants' claims 1, 26, 39, and 41. Further, each of these limitations are required by Applicants' claims 2, 6-13, 15, 17-18, 20, 28-33, 40, and 42 because these claims ultimately depend from claims 1, 26, 39, or 41.

Colliot fails to make up the deficiencies in O'Neill. Colliot discloses a key device comprising an element 1 (key) which can emit a series of sounds, and an element 2 (microphone) for receiving the sounds, which are compared with sounds pre-recorded, and the result of the comparison allow the movement of the latch. Thus, like O'Neill, Colliot does not measure a sensed signal caused by an impact. Further, like O'Neill, Colliot does not compare a sensed signal with a library of predetermined signals, where each of the predetermined signals is sensed when a reference impact is generated on the active zone that corresponds to the sensed signal. In fact, Colliot does not disclose any sound corresponding to a position of an impact on a surface. Further, like O'Neill, Colliot does not deem a sensed signal to be in the active zone of a predetermined signal when the predetermined signal and the sensed signal are sufficiently similar.

*No motivation to combine O'Neill with Colliot.* Even if Colliot remedied the deficiencies O'Neill, which it does not, there is no motivation to combine Colliot with O'Neill. Nothing in Colliot suggests that the sensor in Colliot should be used to measure acoustic waves generated in an object forming an acoustic interface. Additionally, O'Neill provides no motivation for such a combination.

*Colliot is an improper reference.* Section 2141.01(a) of the Manual of Patenting Examining Procedure, Original Eight Edition, Revised February 2003 ("M.P.E.P.") states that, in order to rely on a reference under 35 U.S.C. § 103, the reference must be analogous prior art. O'Neill is directed to electronic whiteboard hot zones for controlling local and

remote personal computer functions while Colliot is in the field of electro-acoustic locks. As such, Applicants submit that Colliot is not reasonably pertinent to the claimed invention because a person having ordinary skill in the art would not reasonably be expected to solve the problem of locating a position of an impact on a surface by considering a reference on electro-acoustic locks.

For the above-identified reasons, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 1-2, 6-13, 15, 17-18, 20, 26, 28-33, and 39-42 be withdrawn.

**THE 35 U.S.C. § 103(A) REJECTION BASED UPON THE COMBINATION OF  
O'NEILL AND TAKAHASHI SHOULD BE WITHDRAWN**

The Examiner has rejected claim 36 under 35 U.S.C. § 103(a) as being unpatentable over O'Neill in view of Takahashi. Applicants traverse the rejection. Claim 36 depends from claim 34. As discussed in Applicants' response to the 35 U.S.C. § 102(e) rejection of claim 34 above, O'Neill also does not disclose (i) measurement of a sensed signal caused by an impact, (ii) comparison of the sensed signal with a library of predetermined signals, or (iii) deeming a sensed signal to be in the active zone of a predetermined signal when the predetermined signal and the sensed signal are sufficiently similar as required by Applicants' claim 34. Takahashi fails to remedy the deficiencies in O'Neill. Furthermore, contrary to the Examiner's assertions, Fig. 3, item 203, and column 8, lines 16-21, of Takahashi does not teach or suggest normalization of a sensed signal. What is normalized in Takahashi is the *differential* between a signal measured when a panel is not being touched (*e.g.*, the waveform illustrated in Figure 4 of Takahashi) and a signal measured when the panel has been touched (*e.g.*, the waveform illustrated in Figure 5 of Takahashi). In other words, the area denoted by the diagonal hash marks in Figure 5 is normalized. The area denoted by the diagonal hash marks in Figure 5 of Takahashi cannot be fairly equated to the sensed signal caused by an impact that is normalized in Applicants' claim 36.

For the above-identified reasons, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claim 36 be withdrawn.

**THE 35 U.S.C. § 103(A) REJECTION BASED UPON THE COMBINATION OF  
COLLIOT AND O'NEILL AND MORE SHOULD BE WITHDRAWN**

The Examiner has rejected claims 16, 37, and 44 under 35 U.S.C. § 103(a) as being unpatentable over Colliot and O'Neill in view of More. Applicants traverse the rejection.

Claims 16, 37, and 44 respectively depend from claims 1, 34, and 41. As discussed in Applicants' response to the 35 U.S.C. § 103(a) rejection based upon the combination of Colliot and O'Neill above, claims 1, 34, and 41 require (i) measurement of a sensed signal caused by an impact, (ii) comparison of the sensed signal with a library of predetermined signals, and (iii) deeming a sensed signal to be in the active zone of a predetermined signal when the predetermined signal and the sensed signal are sufficiently similar. Colliot and O'Neill, either alone or in combination, fail to teach or suggest any of these claim limitations. Moreover, even if they did, there is no suggestion or motivation to combine these reference given in either Colliot or O'Neill. Furthermore, Colliot is an improper reference because it is not at all directed to localizing objects.

More fails to remedy the deficiencies in O'Neill. Furthermore, claims 16, 37, and 44 are patentable over any combination of Colliot, O'Neill and More for the additional reason that no combination of Colliot, O'Neill, and More teaches or suggests comparing a first code with a table of codes, where each code in the table of codes represents data from a predetermined signal corresponding to an active zone. In column 20, lines 19-43, of More a location or column identification of a sensed column electrode is transformed to a coded binary number. By the time this coded binary number is generated in More, the position of the pen is known. Thus, one of skill in the art, upon reading More, would not have had any motivation to formulate a code of a sensed signal and codes for each of a plurality of reference signals and compare the codes to each other as required by Applicants' claims 16, 37, and 44.

For the above-identified reasons, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 16, 37, and 44 be withdrawn.

**THE 35 U.S.C. § 103(A) REJECTION BASED UPON THE COMBINATION OF  
COLLIOT AND O'NEILL AND TAKAHASHI SHOULD BE WITHDRAWN**

The Examiner has rejected claims 3, 5, 27, and 43 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Colliot, O'Neill and Takahashi. Applicants traverse the rejection. As discussed in Applicants' response to the 35 U.S.C. § 102(e) rejection of claim 34 above, O'Neill also does not disclose (i) measurement of a sensed signal caused by an impact, (ii) comparison of the sensed signal with a library of predetermined signals, or (iii) deeming a sensed signal to be in the active zone of a predetermined signal when the predetermined signal and the sensed signal are sufficiently similar as required by Applicants'

claims 1 and 41. Colliot and Takahashi, either alone or in combination, fail to remedy these deficiencies in O'Neill. Thus, claims 3, 5, 27, and 43 are patentable over any combination of Colliot, O'Neill and Takahashi for at least these reasons because these claims ultimately depend on claim 1.

Moreover, claim 43 is patentable for the combination of Colliot, O'Neill and Takahashi for the additional reason that, contrary to the Examiner's assertions, Fig. 3, item 203, and column 8, lines 16-21, of Takahashi does not teach or suggest normalization of a sensed signal. What is normalized in Takahashi is the differential between a signal measured when a panel is not being touched (*e.g.*, the waveform illustrated in Figure 4 of Takahashi) and a signal measured when the panel has been touched (*e.g.*, the waveform illustrated in Figure 5 of Takahashi). In other words, the area denoted by the diagonal hash marks in Figure 5 is normalized. The area denoted by the diagonal hash marks in Figure 5 of Takahashi cannot be fairly equated to the sensed signal caused by an impact that is normalized in Applicants' claim 43.

For the above-identified reasons, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 3, 5, 27, and 43 be withdrawn.

### **THE 35 U.S.C. § 103(A) REJECTION BASED UPON THE COMBINATION OF O'NEILL, COLLIOT, AND SKERLOS SHOULD BE WITHDRAWN**

The Examiner has rejected claim 21 under 35 U.S.C. § 103(a) as being unpatentable over O'Neill in view of Colliot and further in view of Skerlos. Applicants traverse the rejection.

As noted in Applicants' response to the 35 U.S.C. § 102(e) rejection of claim 34 above, O'Neill also does not (i) measure a sensed signal caused by an impact, (ii) compare the sensed signal with a library of predetermined signals, or (iii) deem a sensed signal to be in the active zone of a predetermined signal when the predetermined signal and the sensed signal are sufficiently similar. Each of these limitations are required by Applicants' claim 1 from which claim 21 depends.

Colliot fails to make up the deficiencies in O'Neill. Colliot discloses a key device comprising an element 1 (key) which can emit a series of sounds, and an element 2 (microphone) for receiving the sounds, which are compared with sounds pre-recorded, and the result of the comparison allow the movement of the latch. Thus, like O'Neill, Colliot does not measure a sensed signal caused by an impact. Further, like O'Neill, Colliot does not



compare a sensed signal with a library of predetermined signals, where each of the predetermined signals is sensed when a reference impact is generated on the active zone that corresponds to the sensed signal. In fact, Colliot does not disclose any sound corresponding to a position of an impact on a surface. Further, like O'Neill, Colliot does not deem a sensed signal to be in the active zone of a predetermined signal when the predetermined signal and the sensed signal are sufficiently similar.

*No motivation to combine O'Neill with Colliot.* Even if Colliot remedied the deficiencies O'Neill, which it does not, there is no motivation to combine Colliot with O'Neill. Nothing in Colliot suggests that the sensor in Colliot should be used to measure acoustic waves generated in an object forming an acoustic interface. Additionally, O'Neill provides no motivation for such a combination.

*Colliot is an improper reference.* Section 2141.01(a) of the Manual of Patenting Examining Procedure, Original Eighth Edition, Revised February 2003 ("M.P.E.P.") states that, in order to rely on a reference under 35 U.S.C. § 103, the reference must be analogous prior art. O'Neill is directed to electronic whiteboard hot zones for controlling local and remote personal computer functions while Colliot is in the field of electro-acoustic locks. As such, Applicants submit that Colliot is not reasonably pertinent to the claimed invention because a person having ordinary skill in the art would not reasonably be expected to solve the problem of locating a position of an impact on a surface by considering a reference on electro-acoustic locks.

Skerlos fails to make up the deficiencies in O'Neill and Colliot. Skerlos is directed to a multi-mode automatic channel frequency synthesis system. Thus, like O'Neill and Colliot, Skerlos does not measure a sensed signal caused by an impact. Further, like O'Neill and Colliot, Skerlos does not compare a sensed signal with a library of predetermined signals, where each of the predetermined signals is sensed when a reference impact is generated on the active zone that corresponds to the sensed signal. Further, like O'Neill and Colliot, Skerlos does not deem a sensed signal to be in the active zone of a predetermined signal when the predetermined signal and the sensed signal are sufficiently similar.

*No motivation to combine O'Neill with Colliot and Skerlos.* Even if Skerlos remedied the deficiencies O'Neill and Colliot, which it does not, there is no motivation to combine these references. Nothing in Skerlos suggests any component of the reference should be used to measure acoustic waves generated in an object forming an acoustic interface. Additionally, O'Neill and Colliot provides no motivation for such a combination.

*Skerlos is an improper reference.* Section 2141.01(a) of M.P.E.P. states that, in order to rely on a reference under 35 U.S.C. § 103, the reference must be analogous prior art. O'Neill is directed to electronic whiteboard hot zones for controlling local and remote personal computer functions while Colliot is in the field of electro-acoustic locks and Skerlos is directed to a multi-mode automatic channel frequency synthesis system. As such, Applicants submit that both Colliot and Skerlos are not reasonably pertinent to the claimed invention because a person having ordinary skill in the art would not reasonably be expected to solve the problem of locating a position of an impact on a surface by considering a reference on electro-acoustic locks or multi-mode automatic channel frequency synthesis systems.

For the above-identified reasons, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claim 21 be withdrawn.

**THE OBJECTION TO CLAIMS CONTAINING ALLOWABLE SUBJECT MATTER  
SHOULD BE WITHDRAWN**

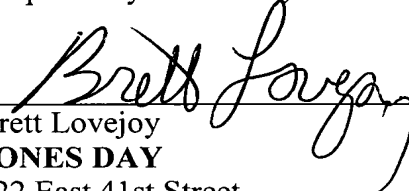
The Examiner has objected to claims 14, 22-25, 38, and 45 as being dependent upon a rejected base claims. The Examiner states that these claims would otherwise be allowable. Applicants respectfully submit that the rejected base claims are fully allowable and thus request that objection to claims 14, 22-25, 38, and 45 be withdrawn.

**CONCLUSION**

Applicants respectfully request that the present remarks be made of record in the instant application. If any issues remain in connection herewith, the Examiner is respectfully invited to telephone the undersigned to discuss the same.

Respectfully submitted,

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